

## CLAIMS

1. A Rankine cycle system comprising an evaporator (12) for heating a liquid-phase working medium with exhaust gas of an engine (11) so as to generate a gas-phase working medium, and a displacement type expander (13) for converting the thermal energy of the gas-phase working medium generated in the evaporator (12) into mechanical energy,

characterized in that the system comprises control means (20) for controlling the amount of liquid-phase working medium supplied to the evaporator (12) and the rotational speed of the expander (13) so as to make the temperature of the gas-phase working medium at the outlet of the evaporator (12) coincide with a target temperature.